



## High Strength Concrete Utilized:

It is the development of higher-strength concretes which makes buildings like the Scotia Plaza possible and removes former barriers. Only 20 years ago concrete stronger than 33 megapascals (MPa) was not available. In Scotia Plaza the concrete reaches 70 MPa in the lower levels. Reinforced concrete buildings can now rise as high as those constructed with steel.

New admixtures such as silica fume (a blast furnace by-product) make the higher strengths possible by adding durability, cohesiveness and increased mechanical strength. The concrete designed for the Scotia Plaza project was able to reach 12 MPa requirements in 12 hours in the seventy-six exterior concrete columns, allowing the three day pouring cycle. At the same time, the concrete reached its full strength of 70 MPa in 91 days.

◀ Self-elevating forms for the core and exterior tube assisted a three day per floor pouring cycle.

7 400 tonnes of rebar were used.

## Three Day Cycle per Floor:

The construction managers also went with two self-elevating hydraulic forming systems (one for core forming and the other for forming the exterior tube). This took further pressure off the two site cranes by eliminating the need to move formwork.

The self-climbing forming systems allowed a pouring cycle of only three days per floor and eliminated the need to remove forms to install the reinforcing steel.

“Working on a three day cycle has dispelled the notion that you can’t build a concrete structure faster than steel,” said PCL construction manager, Morris Boyle.

Resisting wind forces of over 3.6 million kilograms is 7 400 tonnes of reinforcing steel buried in over 70 000 cubic metres of concrete. Epoxy-coated rebar was used to provide protection against corrosion by deicing salts in the six-level underground parking garage.

